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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,055	02/20/2004	Robert E. Buxbaum	REB-1360201	6857
25006 7590 07/25/2008 GIFTORD, KRASS, SPRINKLE, ANDERSON & CITKOWSKI, P.C. PO BOX 7021 TROY, MI 48007-7021				
EXAMINER WARTALOWICZ, PAUL A				
ART UNIT		PAPER NUMBER		
1793				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/784,055

**Applicant(s)**

BUXBAUM, ROBERT E.

**Examiner**

PAUL A. WARTALOWICZ

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Towler et al. (U.S. 6409974) in view of Krumpelt et al. (U.S. 6967063).

Towler et al. teach a process for forming hydrogen from a feedstock (col. 1) wherein a feedstock is heated with a fuel exhaust stream (col. 10) and then is fed to a reformer and an endothermic product and hydrogen are produced (col. 4, 6) and then fed to a shift reaction zone (col. 7) wherein hydrogen gas and waste gas are produced (col. 8), wherein the waste gas is burned to provide heat to the reformer reaction (col. 8, 9).

As to the limitation of burning feedstock to said burner to provide heat to the reactor, Towler teach that the burner fuel comprises natural gas, which is the

composition of the feedstock (col. 5, 9). This burner fuel is fed to the combustion zone with combustion gas at efficient conditions (col. 6).

Regarding the limitation of said feedstock is preheated within a pump supplied boiler, it appears that this limitation is a product by process limitation. The product in this case is a preheated feedstock. It appears that the preheated feedstock of the prior art is substantially similar as that of the prior art. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown* 173 USPQ 685 and *In re Fessman* 180 USPQ 324.

Regarding the limitation of monitoring the temperature and pressure, Towler teach monitoring temperature (col. 6). Although Towler does not explicitly teach monitoring pressure, one of ordinary skill in the art would be motivated to monitor pressure as Towler teach monitoring reaction conditions (col. 6).

As to the limitation of "providing feedstock to an exothermic reactor" and "allowing sufficient residence time for said feedstock in said reactor to undergo an endothermic reaction", it appears that these limitations are contradictory and it is unclear what is being claimed.

Regarding the limitation wherein combustible flow gas is provided stoichiometrically to burn raffinate, one of ordinary skill in the art would recognize the advantages of providing stoichiometric amounts of combustible gas such as efficiency and optimization of the reaction between the combustible gas and the raffinate.

Towler fails to teach that hydrogen is passed through a membrane to thereby separate the hydrogen from the raffinate stream after the water gas shift reaction.

Holland et al. teach a method for producing hydrogen (col. 1) wherein two reactions proceed, the first being a reforming reaction and the second being a water gas shift reaction, whereby the product stream of the water gas shift reaction is purified by passing the hydrogen through a hydrogen permeable membrane and leaving the raffinate (col. 4, lines 15-26; col. 7, lines 46-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the product stream of the water gas shift reaction is purified by passing the hydrogen through a hydrogen permeable membrane and leaving the raffinate (col. 4, lines 15-26; col. 7, lines 46-61) in Towler et al. in order to purify the product stream of the gas shift reaction as taught by Holland et al.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **PAUL A. WARTALOWICZ** whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Langel/  
Primary Examiner, Art Unit 1793

Paul Wartalowicz  
July 16, 2008

Wayne Langel  
Primary Examiner  
A.U. 1793